

# MONITORING REPORT – MOWP

Energy Sector Reforms Program  
Till March 2017.



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## Executive Summary

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The Ministry is playing its role in the social and economic well-being of the general public, in accordance with its assigned functions. In order to provide relief to the general public from load shedding, the present government has taken a number of initiatives/programs to enhance the generation capacity of electricity through various short and long term plans. The vision of the Ministry is to develop the most efficient and consumer centric power generation, transmission, and distribution system that meets the needs of its population and boosts its economy in a sustainable and affordable manner. It also aims to ensure adequate, equitable and economical availability of water for irrigation, domestic, industrial and environmental needs of the country.

The government reform plan is based on the National Power Policy 2013 (Policy), which was approved by the Council of Common Interests on July 27, 2013. The document frames the broad contours of the energy policy articulating the vision for the power sector, highlighting its key challenges, setting major goals, summarizing policy principles, and highlighting the strategy devised to achieve Pakistan's aspirations.

To achieve the objectives laid down in the Policy, Government of Pakistan with the assistance of international development partners started the reform program "Pakistan Sustainable Energy Sector Reform Program" (program) in 2014. The main objective of program is to support the implementation and goals of the GOP National Power Policy to develop an efficient and customer oriented electric power system that meets the needs of its people and economy.

The program was divided into three sub programs with sub programs 1 and 2 were jointly financed by Asian Development Bank (ADB), World Bank (WB) and Japan International Cooperation Agency (JICA) and has been approved. The completion of Subprogram 3 requires the completion of prior actions for Sub program 3 and continued implementation of actions completed in Subprogram 1 and 2.

One of the goals of reform program is the Monitoring and Surveillance as laid down in policy action 10 of Sub program 1 that reads as follows:

*“The policy action requires establishment of a Monitoring unit within both MOWP and MPNR with the responsibilities of monitoring the energy sector, reporting on quarterly basis and make public disclosure of the quarterly report”*

Therefore, a comprehensive monitoring report is required to be prepared to cover all the activities under the program and in addition to other areas, presents an overview of the progress achieved on various policy actions under subprogram 1 to 3, the impact of reforms and the analysis of performance of power sector under various key performance indicators.

## Background

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Power Sector in Pakistan has been facing serious crises during the last few years owing to the following reasons:

- Deterioration in Energy Mix causing:
  - Increase in Electricity Generation cost.
  - Shortage of Electricity due to insufficient available generation to supply the demand.
- Inefficiencies and high cost in generation.
- Inefficiencies in Transmission and Distribution of electricity.
- Mounting circular debt.
- Heavy Reliance on Subsidies.

The Power Sector Reform in the country is witnessing a progressive tariff rationalization process. As the power sector requires a significant amount of resources to meet current and future customer demand, its ability to attract commercial capital need to be ensured through relevant policy and regulatory actions. These include but are not limited to the followings:

- Rationalization of Tariff and subsidies
- Improvement in the generation mix
- Reduction in the cost of generation
- Demand side (consumers) improvement in energy efficiency and energy conservation

## National Power Policy

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In order to achieve the goals given in its manifesto, current government took the initiative and developed an ambitious power policy to support the current and future energy needs of the country. The policy aims to address all the issues related to poor generation mix, inefficiencies in generation, transmission and distribution of electricity, mounting circular debt and rationalization of tariff and subsidies.

### **Long Term goals:**

To achieve the long –term vision of the power sector, the Government of Pakistan has set the following nine goals in National Power Policy 2013:

- i. Build a Power Generation Capacity that can meet Pakistan’s energy needs in a sustainable manner
- ii. Create a culture of energy conservation and responsibility
- iii. Ensure the generation of inexpensive and affordable electricity for domestic, commercial and industrial users by using the indigenous resources such as natural gas, coal and hydel.
- iv. Minimize the pilferage and adulteration in fuel supply
- v. Promote world class efficiency in Power Generation
- vi. Create a cutting edge and reliable transmission network
- vii. Minimize the inefficiencies in the distribution network
- viii. Phase out the financial losses across the system
- ix. Align the ministries involved in energy sector and improve the sector Governance

### **Targets:**

Pakistan has set key targets in terms of the demand-supply gap, affordability, efficiency, financial viability and governance of the system to be achieved by 2017. The extent to which the policy can meet these targets will measure the success of the policy and the nation’s ability to overcome the key problems afflicting the power sector.

Target
Supply – Demand Gap: Decrease Demand Supply gap from 4,500- 5,000 MW to 0
Affordability: Generation cost to be reduced from Rs. 12/unit to Rs. 10/Unit
Efficiency: Decrease Transmission & Distribution Losses from 23-25% to 16%
Financial Viability & Collection: To improve collection from 85% to 95%

### Short Term Objectives

- Bring existing capacity online
- Stop pilferages
- Rationalization of Tariff
- Implement Performance Contracts
- Enhance transparency and accountability through open access to information and public outreach

## Salient Features of Energy Sector Reforms Program

The overall object of the program is to support the implementation and goals of the GOP National Power Policy 2013 to develop an efficient and customer oriented electric power system that meets the needs of its people and economy sustainability and affordability. The operation focuses particularly on policy and institutional actions that will restore financial viability and thus reduce the burden of public financing of the sector. Within this overall strategic focus, the actions prioritize will ensure a sustainable least cost generation mix and a transparent and predictable policy and regulatory framework to attract and finance investments, protect customers and strengthen the credit worthiness of companies in the power sector.

The program's goals broadly focus on:

- a) adoption of clear policies on tariffs and subsidies to target low income customers; ensuring policy implementation through NEPRA rules and regulations; and reduction of discretionary policy decisions and lag in tariff approvals and implementation.

- b) Loss reduction and improving collection in Discos
- c) Managing generation cost through Least Cost Planning (LCP), and ensuring new generation entry follows the LCP
- d) Commercialisation and improving performances of public companies in power sector
- e) Commercial Operations of CPPA as an independent company agency to buy power on behalf of Discos, and implementation of a multiple buyer market by allowing generators to contract sales directly with large customers.
- f) Increasing access to information in the energy sector
- g) Strengthening NEPRA
- h) Monitoring and Surveillance

## Monitoring Unit

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In order to strengthen the monitoring and surveillance process, Economic Coordination Committee of Cabinet (ECC) approved the establishment of monitoring unit within both the MOWP and MPNR with the responsibilities of monitoring the energy sector, reporting on quarterly basis and make public disclosure of the quarterly report; and MOWP and MPNR formulated the scope of work for advisors to review quarterly monitoring reports and provide advice and recommendations on the implementation of the reforms which will be made public.

In order to achieve the above mentioned objectives, the Ministry of Water and Power (MoWP) has implemented a monitoring mechanism of progress and impact, and is ensuring the delivery of quarterly reports which are presented and reviewed by the Economic Coordination Committee, and then made available in the public domain.

The MoWP Monitoring unit is responsible for the following:

- 1) To Monitor the implementation of the Five Year Sector Reform Program.
- 2) To set up the benchmarks and Key performance indicators for Distribution and Generation Companies and other related entities to the Reform process under the MoWP.

- 3) To make the Public Disclosure of the monitoring reports and ensure its presentation as and when required to/by the competent forum

*“Broadly, the Monitoring unit ensures the compliance of the GOP’s objectives planned under National Power Policy 2013”.*

## Data Sources

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- **Ministry of Finance (MOF):** Major data collection from Corporate Finance wing
- **Ministry of Water & Power (MOWP):** Major data collection from Power Finance Wing
- **Pakistan Information Technology Company (Pvt) Limited (PITC):** Information on Discos billing and collection
- **Distribution Companies (Discos):**
  - i) Discos website
  - ii) Reporting of Distribution Companies to MWP as established in performance contracts.
- **National Transmission and Dispatch Company Limited (NTDC) and National Power Control Centre (NPCC):**
  - i. NTDC website
- **Central Power Purchase Agency (Guarantee) Limited (CPPA-G):**
  - i. CPPA-G website
- **Generation Companies (Gencos):** Information was collected from Gencos reporting as established in the performance contract.
- **National Electric Power Regulatory Authority (NEPRA):** Information was mostly collected from NEPRA website.



- Private Power Infrastructure Board (PPIB) / Alternate Energy Development Board (AEDB) / Water & Power Development Authority (WAPDA)

## Key Performance Indicators

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The Key Performance Indicators (KPI's) monitored relates to the following areas:

### 1. Increasing collection

Baseline Year: 2013-14

Sr	Year	Collection (%)
1	2013-14	89.1
2	2014-15	88.1
3	2015-16	94.6
4	2016-17 (HY)	92.2

Disco wise Billing and collection from FY 2013-14 to FY 2016-17 (HY) annexed

### 2. Reducing Transmission & Distribution Losses:

Baseline Year: 2013-14

Sr	Year	T&D Losses (%)
1	2013-14	18.6
2	2014-15	18.8
3	2015-16	17.9
4	2016-17 (HY)	17.2

Disco wise Billing and collection from FY 2013-14 to FY 2016-17 (HY) annexed

3. **Generation Mix:** Annual generation (fuel-wise) is as given below:

Description	FY 2016-17 (HY)	FY 2015-16	FY 2014-15	FY 2013-14
	Gwh	GWh	GWh	GWh
Hydel	19,654	34,272	32,562	32,239
RFO	15,555	30,235	31,466	35,135
GAS	15,044	28,961	22,691	19,835
HSD	542	1,428	2,906	1,624
COAL	37	105	102	111
Others	3,995	6,115	7,218	6,204
<b>Total</b>	<b>54,826</b>	<b>101,116</b>	<b>96,945</b>	<b>95,148</b>

4. **Implementation of Multi Year Tariff (MYT) in DISCOs:**

The KPIs are:

(a) Number of Discos that filed Multiyear Tariff Petition with NEPRA; = 03

(b) number of MYT petitions filed by Discos; = 03

(c) number of MYT Discos determinations. =03

5. **Commercial Operation of independent CPPA**

a. The KPI is /are: Baseline = 0.

(a) Number of PPAs signed between CPPA – G and thermal power plants :

Target Achieved as all power plants of Gencos signed PPA

No of PPAs Signed = 4

(b) Numbers of Energy Supply Agreements signed between Disco and CPPA-G.

Target Achieved as all Discos have signed ESA

No of ESA signed =10

#### 6. Load-shedding Duration:

The load-shedding duration is measured in terms of Total Average hours of load shedding.

Baseline Year: 2013-14

Sr.	Year	Hours (Avg)
1	2013-14	8-9
2	2014-15	6-8
3	2015-16	5-7
4	2016-17 (HY)	3-4

#### Load- Shedding Status in Industry:

Sr.	Year	Hours (Avg)
1	2013-14	08
2	2014-15	01
3	2015-16	0
4	2016-17 (HY)	0

## Review of Policy Actions

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### Sub Program I

Objective	Process	Progress
Adoption of clear policies on tariffs and subsidies to target low income		Completed <b><u>Economic Coordination Committee approved the</u></b>

<p>consumers; ensuring policy implementation through NEPRA rules and regulations; and reduction of discretionary policy decisions and lag in tariff approval and implementation.</p>		<p><b><u>Tariff &amp; Subsidy Policy Guidelines covering the following:</u></b></p> <p>Subsidy policy for low income residential groups  Multi-year Tariff Petitions and determination  Guidelines for the tariff setting as envisaged in NEPRA Act; including the forward looking FPA through NEPRA proceedings  Guidance for circular debt management:  Monthly accounting of arrears of payment by Discos to CPPA  Mechanism to cap the overdue payables to power generators</p>
<p>Loss reduction &amp; improving collections in DISCOs</p>	<p>3. (i) MOWP instructed PESCO, HESCO, SEPCO, and MEPCO to outsource to the private sector collection of their respective feeders with losses of 50% or above; (ii) MOWP instructed all DISCOs to implement revenue protection program that ensures</p>	<p><b>Completed</b></p> <p><b>a).</b> Discos are implementing revenue protection measure like introduction of smart meters, mobile based meter reading and technology based measures</p>

	<p>correct billing, reduces losses, in particular theft, and improves collections; (iii) Council of Common Interests initiated discussion for mechanism to automatically adjust amount of receivables owed by provincial governments and agencies; and (iv) Federal Government adjusted receivables of federal agencies or entities not to exceed 90 days of billing by DISCOs.</p>	<p>b) At source deduction of Government receivables:</p> <p><i>Council of Common Interest in its meeting held on 29-05-2014 decided that at-source deduction of the electricity charges relating to the provincial government departments will be made @ 25% of the amount of bill subject to reconciliation of electricity bill between Disco and Provincial governments.</i></p> <p>Reconciliation started with Provincial reconciliation for controlling overdue.</p>
<p>Managing generation cost through Least Cost Planning (LCP), and ensuring new generation entry follows the LCP.</p>	<p>4. MOWP issued an instruction establishing the principles and process for NTDC to prepare the long-term least-cost generation and transmission expansion plan and its periodic update.</p>	<p><b>Completed</b></p>
<p>Commercialization and improving performance of public companies in the power sector.</p>	<p>6. MOWP signed performance contract including operational and financial performance indicators and the monitoring framework with at least 3 DISCOs.</p>	<p><b>Completed</b></p>

<p>Commercial Operation of CPPA as independent agency to buy power on behalf of DISCOs, and implementation of a multiple buyers' market by allowing generators to contract sales directly with large consumers.</p>	<p>7. (i) CPPA's memorandum and Articles of Association amended to establish CPPA as an agent to purchase electricity on behalf of distribution companies (including DISCOs); and (ii) CPPA signed on behalf of DISCOs with GENCO's Holding Company on behalf of GENCOs, Heads of Agreement (HoAs) reflecting key principles for power purchase agreements for existing thermal plants, with energy price based on heat rate testing which HoAs have been endorsed by the respective BODs.</p>	<p><b>Completed</b></p> <p>1.To start the operationalization of CPPA-G, MOA &amp; AOA of CPPA were amended and establish CPPA as an agent to purchase electricity on behalf of the Discos, and implement and administrate competitive power markets.</p> <p>ii. CPPA signed on behalf of Discos with Genco Holding Company on behalf of Gencos Head of Agreements (HOA) reflecting key principles for power purchase agreements for existing thermal plants, with energy based in heat rate testing; which HOA have been endorsed by the respective Board of Directors.</p>
<p>Increasing access to information in the energy sector.</p>	<p>8. NTDC implemented web-based open access to operational information, including merit order, and daily payment instruction to generators.</p> <p>9. Each DISCO (i) included subsidy amount in customer's</p>	<p><b>Completed</b></p> <p>Each Disco included Subsidy amount in consumer bills and Bills are being issued with the subsidy amount</p>

	bills; and (ii) published on its website monthly billing and collection data aggregated by consumer category.	Each Disco is publishing monthly billing and collection information on its website
Monitoring and Surveillance.	10. ECC approved establishment of monitoring units within both MOWP and MPNR with the responsibilities of monitoring the energy sector, reporting on quarterly basis and make public disclosure of the quarterly report; and MOWP and MPNR formulated the scope of work for advisors to review quarterly monitoring reports and provide advice and recommendations on the implementation of the reforms which will be made public.	<p><b>Completed</b></p> <p><i>Economic Coordination Committee of Cabinet (ECC) approved the establishment of monitoring unit within both the MOWP and MPNR with the responsibilities of monitoring the energy sector, reporting on quarterly basis and make public disclosure of the quarterly report; and MOWP formulated the scope of work for advisors to review quarterly monitoring reports and provide advice and recommendations on the implementation of the reforms which will be made public.”</i></p>

## Sub Program II

Prior Actions DPC 2	Process	Status
<p><b>World Bank 1..</b> Following the mechanism in 2014 Tariff and Subsidy Policy Guidelines, MWP has informed NEPRA of the FY14/15 subsidies by consumer category to incorporate in the tariff determination of each Disco, to apply in FY14/15 expected to result in electricity subsidies to be reduced to 0.7% of GDP.</p>	<p>- MWP Letter to NEPRA with request for reconsideration informing subsidies to incorporate in the consumer categories of each Disco.</p> <p><u>- Document describing and calculating total electricity subsidy estimated for FY14-15, and calculation of percentage of GDP</u></p>	<p><b>Completed</b></p> <p>MWP request to NEPRA for reconsideration informing subsidies to incorporate in the consumer categories of each Disco.</p>
<p><b>World Bank/ADB/JICA 2 .</b> MWP has published in its website a cap for total overdue payables to power generators not to exceed PKR 250 billion and a plan to reduce the flow of new overdue payables.</p>	<p><u>- Cap uploaded and made public in MWP website</u></p> <p><u>- Action plan made public in MWP website</u></p>	<p><b>Completed:</b></p>



Prior Actions DPC 2	Process	Status
<p><b>World Bank 3.</b> The Government has implemented a mechanism based on tariff surcharges and Universal Obligation Fund to maintain national uniform tariffs in Discos while ensuring cost recovery.</p>	<p>MWP sends NEPRA request for reconsideration including subsidy (TDS) and surcharges</p> <p><u>- NEPRA determination including the tariff schedules in NEPRA request for reconsideration</u></p> <p><u>- Government notification establishing equalization surcharge</u></p>	<p>MWP request to NEPRA for reconsideration informing subsidies to incorporate in the consumer categories of each Disco.</p> <p>The Schedule of Tariff was notified on 10<sup>th</sup> June, 2015 for all the distribution companies that includes the surcharges and subsidies for each consumer category. The level of subsidies has been brought down to Rs. 118 billion (0.4% of GDP) for FY 2016-17</p>
<p><b>World Bank 6, ADB/JICA 7.</b> (i) CPPA (G) has demonstrated operational capability to handle all steps in the billing and settlement cycle of electricity sales by Generators and purchases by Discos; and (ii) NEPRA has granted an amendment to NTDC license to eliminate CPPA functions.</p>	<p>Details in separate table</p>	<p><b>Completed</b></p>
<p><b>World Bank 7, ADB/JICA 8.</b> CPPA (G) publicly disclosed on its website the monthly amounts due, and payments made, by each Disco to CPPA (G), and by CPPA (G) to Generators, including arrears.</p>	<p><u>- CPPA G website discloses the information required (in two templates) for the month of May, based in information provided by NTDC (CPPA) [in the transfer]</u></p>	<p><b>Completed:</b></p>

Prior Actions DPC 2	Process	Status
<p><b><i>World Bank 8, ADB/JICA 9.</i></b></p> <p>NEPRA has disclosed the annual Discos' performance and evaluation report, and has initiated outreach action to consumers on the content thereof; and Discos have disclosed on their respective websites their annual performance reports, including their plans to improve service delivery.</p>	<p>- NEPRA uploaded Distribution Companies performance evaluation report FY2013-14 in its website</p> <p>- <u><i>Each and all [9] Discos upload in its website their Performance Evaluation Report for FY2013-14</i></u></p> <p>- <u><i>NEPRA outreach action</i></u></p>	<p><b>Completed</b></p> <p>NEPRA has uploaded on its website the annual Discos' performance and evaluation report, and has initiated outreach action to consumers on the content thereof; and Discos have disclosed on their respective websites their annual performance reports, including their plans to improve service delivery.</p>
<p>MWP Monitoring Report(s) completed and made public</p>	<p>- <u><i>MWP website includes MWP Monitoring Report(s), describing monitoring of results of DPC 1 actions, progress in implementation of power sector reform and progress to complete DPC 2 actions</i></u></p>	<p><b>Completed:</b></p>
<p>NTDC implements web-based open access to operational information, including merit order, and daily payment instruction to generators.</p>	<p>- <u><i>NTDC updates information in website on a daily basis for payment to generation and operational data, and every 15 days for merit order</i></u></p>	<p><b>Completed</b></p>
<p>Each Disco publishes on its website monthly billing and collection data aggregated by consumer category.</p>	<p>- <u><i>The monthly billing and collection information is updated in all 9 Discos</i></u></p>	<p><b>Completed</b></p>

**Action related to CPPA – G Operationalization has been completed and following steps has been done in this regard to ensure completion:**

1. Appoint all the key officials of CPPA-G
2. File a Petition in NEPRA seeking a license for its operations in succession of NTDC;
3. Before filing the application obtain concurrence of all DISCOs, GENCOs and IPPs for the changeover;
4. Reach agreements with all stakeholders to formally incorporate CPPA in place of NTDC in their agreements with power purchaser;
5. Get approval from NEPRA for a set of market rules for the working of the CPPA-G;
6. Get approval from NEPRA of a set of commercial codes for the working of Market Rules;
7. Implement Market Rules;
8. Make CPPA-G operational by issuing the billing invoices and collection through it;
9. Approval of Economic Coordination Committee regarding separation of CPPA from NTDC and the Road Map;
10. Approval of Board of Directors of NTDC and CPPA (G) to adopt the Road Map and documentations approval including BTA, PPAAAs, PPA, AA and LPM;
11. Approval of SECP to appoint CPPA (G) as agent of DISCOs and market agent;
12. NTDC license modification submittal and Approval of NEPRA to amend the NTDC license;
13. Execution of Business Transfer Agreement between NTDC and CPPA (G);
14. ECC approval to for the Administration Agreement in lieu of Power Purchase Agreements and time lines;
15. Execution of Power Purchase Agency Agreement between CPPA (G) and each Disco;
16. Administration agreement between the CPPA (G) and NTDC for administering existing PPAs between:
  - a) Gencos and NTDC
  - b) WAPDA Hydel and NTDC
  - c) IPP's of 2002 Power Policy

d) IPPs of 1994 power policy

17. CPPA signed on behalf of DISCOs Heads of Agreement (HoAs) reflecting key principles for power purchase agreements for existing thermal plants, with energy price based on heat rate testing; respective HOAs have been endorsed by the Board of Directors;
18. Framing of Market Rules by NEPRA and Notification by GOP;
19. Drafting of Commercial Code by CPPA-G, submittal to NEPRA and approval by NEPRA;
20. CPPA (G) registers for GST and Income Tax with FBR;
21. Pre-closing action annexure in Business Transfer Agreement;
22. Hiring of CEO, CFO, COO, Company Secretary and allied staff;
23. Start of Settlement operation by CPPA (G) – START OF BANKING TRANSACTIONS;
24. Establishment of Independent website of CPPA (G) & Disclosure of Data on CPPA (G) websites;
25. Issuance of Invoices to Discos by CPPA (G)
26. Approval of Agency fee by NEPRA.

### **Sub Program 3**

The Government is committed to completion of the prior actions for the power sector reform agenda as part of Sub-program III with the Asian Development Bank. The program is expected to enhance further the long-lasting impact of reforms agenda carried out in Sub programs 1 and 2 and will consolidate the structural reforms agenda for sub-program 3.

#### **NEPRA Act Amendment:**

A key goal of the National Power Policy of 2013 approved by the Council of Common Interests is to “improve the governance of all related federal and provincial departments as well as regulators”. The Policy is driven by three principles, i.e. (i) efficiency, (ii) competition, and (iii) sustainability. Consequently, the Policy not only affirms the resolve of the Federal Government that “Government would like to limit its role to policy making, and unless necessary, service delivery will be promoted through a fiercely competitive and transparent private sector”, it also approves the strengthening of NEPRA as “a world class regulatory authority with sophisticated and efficient capacity to establish tariffs and set the foundation for a competitive bidding process”.

It was therefore decided that amendments would be initiated in the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997, which would lay down the requisite legal framework within which the power markets of Pakistan will ultimately develop to achieve the approved goals of the CCI and modern power sector.

National Electric Power Regulatory Authority’s powers and functioning would be enhanced, for it to independently and effectively regulate a competitive market structure, while also developing adequate checks and balances to ensure certainty and transparency of regulation. The policy function of the Federal Government would also be circumscribed more clearly in the law, in accordance with the Policy as well as the requirements of the power sector, therefore leading to a clearer delineation of policy and regulation.

The proposals for amendment of the act aim to:

- (a) Improve energy security in the country;
- (b) Modernize the law as per international best practices;
- (c) Ensure equitable regulation of public and private entities in the power sector;
- (d) Assure efficient and reliable power supply; and
- (e) Introduce competitive market players and transactions.

### **Circular debt capping plan**

The update on circular debt capping plan entailed reduction of outstanding stock through Initial Public Offering (IPO) of GEPCO in FY 2016/17 and two DISCOs (IESCO and FESCO) in FY 2017/18 and eventually through strategic sale of DISCOs beginning from FESCO in FY2018/19 till FY2021/22.

The government is committed to the privatization process. The government has also been arguing the case in the court of law for the right to have legitimate surcharges and a finalization of the case.

The updated CD capping model is built dynamically. In the model, the user can select whether the IPO or Privatization process will take place as planned. In case IPO/ Privatization go as planned, the GOP will receive privatization receipts.

## Impact of Reforms:

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The current government inherited a chronic power load shedding with yawning supply-demand gap of over 6000 MW. Such an enormous gap led to a load-shedding of 12-16 hours across the country. The widespread and growing phenomenon of power load shedding not only has led to significant losses of output, employment and exports but also during periods of high outages, there has been large scale protests across the country. Present Government took immediate measures and picked up debt stock of power sector amounting to Rs. 480 billion that resulted in addition of 1,700 MW to 2,000 MW of electricity in the National Grid.

Further, with better operational and financial management, the load shedding has been reduced to around average 6-8 hours a day. The energy gap with average demand supply gap has reduced to 2,800 MW in FY 15-16 compared to 4,645 MW in FY 12-13. This has translated in a reduction of load-shedding to an average of 06 hours a day. The electricity consumption in industrial sector has increased by 13.14% during the last two years. At the same time, the share of industrial sector consumption has reached the highest ever level of 29.02%. Government is already working actively on various energy projects including renewables that will add at-least 10,000 MW to the national grid that will largely solve the problem of electricity load shedding by 2017-18.

As a result of structural and institutional reforms introduced by current government strengthened by proper monitoring, not only the average generation has increased, but distribution losses have been reduced (**from 18.9 percent in June 2015 to 17.9 percent in June 2016**), payment collection rates increased (**from 89.2 percent in June 2015 to 94.6 percent in June 2016**), the volume of energy subsidies has decreased (from 0.7 percent of GDP to 0.4 percent), notified electricity tariffs remained constant at Rs.11.45/unit vs Rs. 12.33/unit of determined tariff. Power sector subsidies remained at Rs. 118 billion. In order to facilitate agriculture and industrial sector, GOP also provided special incentives to both the sectors through tariff reduction.

The improvement in collection and reduction in line losses has been made possible through better monitoring, management, assignment of quarterly targets to all Disocs and

introduction of mobile based meter reading, smart meters, introduction of hand held units and at source deduction for recovery of government dues.

Current Government has embarked upon to rationalize the consumer end tariff to bring it in line with the cost of service. NEPRA has recently issued Multi Year Tariff Determination for three Distribution Companies. It is expected that in future, rest of Discos will file the Multi Year Tariff Petitions. Discos have also started to submit tariff petitions in line with cost of service study concept. NEPRA has been allowed to pass on Fuel Price Adjustments (FPA) without prior clearance from the Government.

Development and effective implementation of energy efficiency codes promote energy efficiency in the country and envisioned to bridge demand – supply gap in the country. New Electricity Act is being introduced which will help to improve litigation mechanism for power sector. On the regulatory side, a diagnostic audit of NEPRA has been carried out to identify areas where reforms are required. NEPRA is effectively overseeing the performance of power sector, and publishing quarterly performance standards reports and indicators of the DISCOs on its website that also ensure transparency. To strengthen the capacity of NEPRA, Professional Chairman and members have been appointed. NEPRA has issued guidelines for Discos tariff determination and has uploaded draft transmission guidelines for comments. In addition to that, NEPRA has also issued upfront tariff for Mitihari-Lahore transmission line, solar, wind and other alternative energy projects. In addition to that NEPRA has also issued the various rules, regulations, codes and procedures, such as NEPRA (Alternate & Renewable Energy) Distributed Generation & Net Metering Regulations, 2015, NEPRA (Supply of Electric Power ) Regulations, 2015, NEPRA (Interconnection for renewable generation facilities) Regulations, 2015, NEPRA (Market Operator registration, standard and procedure) rules, 2015, NEPRA (Complaint handling and Dispute Resolution) Rules, 2015, NEPRA (Investment Standards & Procedure) Rules, 2015, Commercial Code, 2015 of CPPA (G) and Power Safety Code, 2015

In order to bring transparency in the payment and settlement mechanism, government have operationalized Central Power Purchase Agency (Guarantee) Limited as an effective financial manager of the system. Overhaul of financial and management system in Distribution Companies (DISCOs) and Generation Companies (GENCOs) is being made



to improve their performance to sustainable levels. To increase transparency in the system, monthly dues and payments by the DISCOs to CPPA, and by CPPA to the generators is being made available on the website of CPPA

Within Power Sector Entities, government introduced professional boards and management to improve sector governance. Performance contracts have been signed with DISCOs to tackle losses, raise payment compliance and improve energy efficiency and service delivery. In addition, all distribution companies have been actively pursued for privatization.

Circular Debt is the debt owned by the Power producers to Power Sector entities. Several factors attribute to the buildup of Circular Debt, including the (i) difference between the cost of generation and cost of service (ii) gap between the amount billed and recovered from consumers (iii) line losses beyond NEPRA Target etc, (iv) regulatory shortcoming etc. Buildup of Circular Debt as a first step has been reduced. The stock of debt is being treated separately. The buildup of CD since its clearance in 2013 has been reduced as a result of structural reform.

Mechanism of at source deduction is being implemented for clearance of outstanding receivables from Government Departments and a feeder to feeder monitoring to curtail losses is being pursued. Revenue based load management is being carried out in order to ensure smooth recovery of payables.

As a result of improvement in power sector fuel mix in the country, the basket power prices has been reduced and resulted in improvement of financial viability. Under the reforms, large capacity addition is planned from wind, solar, nuclear, hydel and coal power projects in the medium term. The emphasis is towards achieving a less oil dependent power generation mix through development of indigenous energy resources particularly hydel, coal and renewable energy resources for sustainable and affordable energy supply in the country. Three hydel plants Tarbela 4th extension, Chashma, Neelum Jehlum and few other small dams are expected to provide additional generation within next years. Under a US\$ 16 billion agreement with Qatar, Government had also secured a favorable price of Liquefied Natural Gas (LNG) for 15 years. This will help in

meeting the energy needs and reducing the current tariff rates. With the provision of electricity on economical tariff, our crops and products are being produced cheaply.

IPPs and GENCOs are also being encouraged to convert from oil to coal based power generation. Power sector has been given priority in terms of allocation of gas for power generation. All these efforts have significantly improved the energy mix whereby reducing dependence on oil for power generation, and ensure reasonable tariffs for consumers ultimately leading to financial sustainability.

## Lessons Learnt:

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Drawing on experience of reforms agenda under Sub programs 1, 2 and 3, following observations are highlighted:

1. Although there are several potential benefits of pursuing a reforms agenda in line with global best practices, any universal application of a reforms agenda may never be pursued without accounting for country's own sectoral dynamics. No single sub-sector reform can work without taking a holistic approach.
2. The holistic approach need to base **operational reforms** as the corner stone of all reform agenda; to be adequately accompanied by sectoral liquidity and **financial reforms** along with **strengthening of regulatory regime** to complement the holistic reform agenda.
3. Timely communication among donors of their evaluation plans and work program schedules, by countries and sectors or themes, is crucial for the promotion of a holistic reform agenda for the sector.
4. An important aspect of the reform process was **stakeholder consultation**. While this was a challenge for the process completion and document execution (legal documents for CPPA-G separation like NTDC license amendment, BTAs, NEPRA Act amendment), this provided the necessary framework to achieve the reform agenda.
5. While the reforms agenda resulted in best practices such as greater disclosure of information (economic merit order, payment data, generation data, NEPRA performance evaluation reports) and sound operational and financial flows, the process would have been better if the reform agenda was coordinated and communicated prior to two to three months of the actual implementation plan.
6. In the future, in order to improve communication flows among all concerned stakeholders, it may be recommended that development partners involved in the reforms agenda organize a pre-meeting, seminar or a workshop for all stakeholders involved (MowP, MPNR, NEPRA etc.) and brief them on the reform agenda to make

the process more participatory and consultative. This may bring all the stakeholders to coordinate for the reform agenda in advance and make necessary preparations of their own to coordinate for any legal, financial and operational processes at their end.

7. When reform agenda involves improving technical expertise of the sector (tariff, engineering, regulatory etc.), **capacity building** should be made an imperative objective. It may be suggested to carry out some capacity building activity before starting the reform evaluation process. The capacity building of the reform agenda should instill "learning by doing" approach and institutionalize and strengthen human and technical capacity on an ongoing basis.
8. Joint reform agenda may include specific plans to address cross donor coordination and alignment issues—topics that are a major benefit sectoral strengthening should be carried out with consensus.
9. Harmonization of evaluation methods, through the development and sharing of good practice standards, procedures and an evaluation glossary may facilitate reform agenda and enhance process of learning from each other for greater institutional learning.

## Conclusion:

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The overall performance on Ministry of Water & Power in terms of compliance of policy action under the reform program in particular has been **highly satisfactory** for sub program 1& 2. MOWP has not only carried out major structural reforms like operationalization of CPPA- G but is also successfully implementing the GOP agenda as laid down in the National Power Policy 2013 that resulted in significant improvements of power sector efficiencies.

MOWP has also completed most of the policy actions as required in sub program 3 while some actions that involve parliamentary affairs and court case require more time.

Energy Sector Reform Program has facilitated Government of Pakistan in successfully implementing the reform agenda as laid down in National Power Policy 2013.

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